REMARKS

Claims 2, 3, 5-7, 9, 10, 12, 14-16, 18, 19, and 33-37, were pending in the present application. No claims are amended or cancelled here.

Claim Rejections – 35 USC § 103(a)

Claims 3, 5-7, 9, 12, 14-16, 18-19, 30-31, and 33, stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hogan (US 5,699,434), in view of Maenza (US 6,076,165) in view of Menezes (Handbook of Applied Cryptography) and further in view of Kobayashi et al. (US 6,665,240).

Claims 2 and 10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hogan, Maenza, Menezes and Kobayashi et al. and further in view of Newman, U.S. Patent No. 6,353,890.

In pertinent part, the Examiner stated at the bottom of page 4 of his Action:

> The modified Hogan and Maenza system fails to disclose the use of an XOR function to scramble the patterns that make up the authentication signature and twice scrambling this data.

> However, Menezes teaches the use of scrambled data patterns to make an authentication signature (see pages 22-23) and teaches the use of the XOR function to scramble data (see page 20) and Kobayashi et al. teaches twice scrambling the data (see column 8 line 64 through column 9 line 11 and Figure 1).

> It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Menezes with those of Hogan and Maenza because doing so allows for non-repudiation of data and to protect data quickly and to twice scramble this data in order to be able to provide a system that makes illegal copies have adverse effects.

This rejection did not specifically reference the two pending independent Claims 36 and 37, but it is understood the rejection was intended to apply to same. This is because no other rejection specifically referenced Claims 36 and 37.

This rejection is traversed on the grounds that first, the combination of the references is not motivated or justified, and secondly even if the references were combined as suggested by the Examiner they fail to meet the independent claims.

First, it is not seemed how or why the Examiner combines these references. Menezes is clearly directed to cryptography and in the portions cited by the Examiner to use of authentication signatures in cryptography. Moreover the scrambling in Menezes is for purpose of the signature, not for purposes of preventing copying. Note that encryption and signatures do not inhibit copying. It is possible to easily copy an encrypted or signed file. Secondly, the scrambling used in reproduction of data to be recorded on an optical disc is conventionally part of the mastering process. As pointed out in the earlier response, this well known scrambling is part of conventional encoding, see page 8 of the last filed Amendment. This scrambling is part of the conventional EFM coding with conventional XOR scrambling intended to eliminate DSV problems in conventional data. This is what Hogan refers to in terms of his XOR scrambling. Hence this XOR scrambling is intended to prevent DSV violations and is conventional in EFM coding. Clearly this is not what Menezes is referring to in terms of his XOR operation since that is intended to be part of the authentication signature, and not applied to the data. Of course authentication is not the same as scrambling data.

Kobayashi, although in the field of optical discs, is actually directed to a method of encryption, see Abstract of Kobayashi first sentence "Described herewith is an optical disk manufacturing apparatus for reading recorded digital data for an optical disk, comprising an encryption unit (22, 23) for encrypting entered digital data according to a plurality of key information...." The passage of Kobayashi cited by the Examiner at column 8, line 64 carrying over to column 9, line 11 also refers to this double encryption technique. In this passage of Kobayashi he refers to a double encryption operation. To clarify what he is referring to at column 8, line 64 through column, line 11, see Kobayashi column 8, beginning line 30:

> In FIG. 1, the digital audio signal SA reproduced from a magnetic
> tape by a digital tape recorder 21 is supplied to the first encryption
> circuit 22, and encrypted according to a first key information signal

KY1 supplied from the first key information generation circuit 24.
The encrypted digital audio signal SB supplied from the first
encryption circuit 22 is supplied to the second encryption circuit 23
and encrypted according to a second key information signal supplied
from the second key information generation circuit 25. The double-
encrypted digital audio signal SC supplied from the second encryption
circuit 23 and the second key information signal KY2 supplied from
the second key information generation circuit 25 are supplied to an
disk substrate manufacturing unit 2, and a disk substrate on which the
double-encrypted digital audio signal SC and the second key
information signal KY2 are recorded in the form of convex-concave
pits is manufactured. (emphasis added.)

Hence Kobayashi is directed to double encryption of a data. He is not concerned with

DSV values or preventing copying per se. Encryption of course is not the same as copy prevention

or copy protection since encryption merely limits use of the content, but does not prevent copying of

the encrypted data. Clearly the above quoted passage of Kobayashi is directed to his double

encryption technique; note the use of two encryption keys. As well known in the field, double

encrypting often is done to enhance security. Encrypting something twice does not revert to the

plain text (original data). This is especially the case when two different keys are used. Instead

double encryption results in more complexly encrypted data, the whole purpose of which is to

prevent easy access to the original data without the use of both keys and both decryption algorithms.

Hence it is not seen why one would combine Kobayashi with for instance Hogan or even

with Maenza. Hogan is directed to preventing copying. Maenza is directed to an authentication

signature. There is nothing about an authentication signature in Kobayashi or about preventing

copying.

While Kobayashi does explain EFM encoding, for instance see his FIGS. 7 and 8, clearly

this is merely the conventional EFM encoding well known in optical disk and which is the well

known background to the present invention.

It is not seen why the Examiner's quoted reasons would allow or motivate one to

combine these three references. The Examiner states "doing so allows for non-repudiation of data

and to protect data quickly and to twice scramble this data in order to be able to provide a system that makes illegal copies have adverse effects." Of course in Menezes, there is nothing about "adverse effects" since Menezes is about encryption, signatures and authentication. Kobayashi is also about encryption and not about "adverse effects" on playback. It does not seem why either of these references would be combined with the Hogan approach of DSV alterations.

Hence the Examiner's motivation is not only not clearly stated, it does not make sense, so the combination of references is not properly motivated by anything in the references or otherwise known in the prior art. Hence the basis of the rejection is inadequate, and it is requested that the rejection be withdrawn on this ground alone.

Second, even the Examiner's combination of the references fails to meet the claims. The Examiner admits that the claims called for twice scrambling the data using the XOR function. Moreover this is for copy protection of an optical disk, as recited for instance in the final clause of Claim 36 "wherein transitions in the EFM signal from the applied data patterns are shifted from their ideal values, or the ability of disc drives to maintain optimal beam positioning is compromised, by the twice scrambled data patterns." It is understood that the Examiner believes that the feature of the shifting or the ability of disc drive to maintain optimal beam position is found in Hogan. But as the Examiner admits, Hogan has only the single conventional EFM XOR scrambling, as the Examiner admits "the modified Hogan and Maenza system fails to disclose the use of an XOR function to scramble the patterns that make up the authentication signature and twice scrambling this data". Thus the Examiner cites Menezes for use of the XOR function. But Menezes only uses the XOR for cryptography (signatures) and not for scrambling. Cryptography is not scrambling. In the present case, the scrambling is used to prevent copying. It is not intended to preserve content security, which is the purpose of the Menezes' authentication signature.

Moreover of course Menezes only teaches applying a single XOR function. Hence the Examiner cites Kobayashi on the grounds that "Kobayashi et al. teaches twice scrambling the data (see column 8 line 64 through column 9 line 11 and Figure 1)."

However, this passage of Kobayashi and Kobayashi Figure 1 have nothing to do with twice scrambling. Instead they disclose <u>twice encrypting,</u> as pointed out above. Kobayashi Figure 1 shows the first encryption circuit 22 and the second encryption circuit 23. There are also two separate keys, KY1 and KY2. First, encryption as used in Kobayashi is not the same as scrambling. Kobayashi in fact teaches the conventional <u>single scrambling</u> as conventional in EFM encoding, see his Figures 7 and 8, specifically Figures 7B and 7C and 8A1 and 8A2. In fact Kobayashi even refers to the exclusive OR (XOR) aspect at column 18 line 47 "The exclusive OR circuit 21C receives the M-series signal MS and the disk discrimination code ED, and generates the exclusive OR signal to be used as a conversion signal MD (FIG. 8E)."

Further at Kobayashi column 18 line 57 "Thereby, the exclusive OR circuit 21C modulates the disk discrimination code ED according to the M-series random number." Of course this is the exclusive OR (XOR) modulation conventional in EFM coding and which appears herein Kobayashi to be wholly conventional, as also taught in the present application and in Hogan. There is no double exclusive OR applied however in Kobayashi to propagate DSV problems in accordance with Claim 36, but only the conventional single EFM XOR scrambling in order to <u>prevent</u> DSV problems.

Hence not only does Kobayashi not teach double XOR scrambling, he is not even concerned with the issue of scrambling or with DSV problems. The fact that he has double encryption has nothing to do with double scrambling.

Hence it is clear that in fact the references, even if <u>arguendo</u> combined (and as pointed above the combination is not justified) fail to meet the clause of Claim 36 which recites "encoding the scrambled data patterns using EFM (8-14 modulation) with a second XOR scrambling algorithm having the same pattern of scrambling data as the first XOR scrambling algorithm;".

Hence clearly the rejection fails on the second ground that even the teachings of the various references combined fail to meet the claims.

Further while this is not a matter of law, it is noted the Examiner cited <u>four</u> separate references to reject each of the independent claims. Such a stringing together of references indicates the inherent weakness of the rejection. It also of course suggests a hindsight rejection.

Independent Claim 37 distinguishes over the references for at least the same reasons as does independent Claim 36, having similar subject matter.

The remaining claims are all dependent upon Claims 36 or 37 and are allowable for at least the same reasons as the respective base claim.

CONCLUSION

In view of the above, all pending claims in this application are believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing Attorney Docket No. 136922003800.

Rule 34

This paper is submitted under Rule 34. The correspondence address remains that of Macrovision Corporation.

Dated: March 28, 2008   Respectfully submitted,

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